UNION CARBIDE

NUCLEAR DIVISION NEWS

A Newspaper for Employees of the Nuclear Division, Union Carbide Corporation

Vol. 5 – No. 16

August 15, 1974

QUESTION BOX ??

If you have questions on company policies, benefits, etc. or any other problems with which we might help, just let us know. Drop your inquiry to the Editor, Nuclear Division News. *(Or telephone it to your plant news representative). You may or may not sign your name. It will not be used in the paper if you so desire.*

Questions are referred to the proper authorities for accurate answers. Each query is given serious consideration for publication.

Answers may be given to employees personally if they so desire.

QUESTION: Salaried employees are more interested in and concerned about salary increases now than any other question, what with rampant inflation. Why have some departments in the Technical Division told employees details about the planned increases, but others have given out only total and absolute silence? What we know comes second-hand from those in other departments. We should be treated uniformly.

ANSWER: It was decided as a matter of policy that no written announcements nor meetings of groups of employees would be held regarding the contemplated salary increases since these actions were to be made on a case-by-case basis. Our supervisors were instructed to advise employees, when questions arose, that the Company was concerned about salaries in view of continuing inflation, increasing hiring rates, and increased negotiated wage rates throughout the country, and that employees' salaries were being reviewed on a case-by-case basis.

This amount of information did not satisfy all salaried employees, particularly when reviews were completed and variations in timing created additional questions. In view of this, Mr. Hibbs, at a recent ORNL colloquium, made the following statement: "Let's review what has happened during the past several months and where we are now in connection with our salary increase program. Our 1974 salary increase plan was prepared late last year when we were under Federal Wage and Price Controls. Even before those controls were lifted on April 30, we and other Divisions in the Corporation had been reviewing our programs to determine what actions would be indicated following the control period.

"As a result of the review, we have increased the amount of our initial salary increase program significantly. The question that employees are primarily interested in is how these increased monies will be distributed. To determine this, we asked our managers to review employees' salaries on a case-by-case basis within the following guidelines: 1) those employees who had already received salary increases during the first six months of the year and whose work still merited the kind of increase they had received were to be granted a supplemental increase in July; 2) those employees who were scheduled for salary increases during the latter six months of the year were to be reviewed and their increase to be adjusted either by adding dollars or by shortening the time period, or both, to reflect proper action in the light of present circumstances; 3) salaries of all other employees were to be reviewed and decision made on a case-by-case basis what salary action, if any, should be taken.

"The net effect of these reviews, which are now about completed, is that salary action will be taken during calendar year 1974 in connection with most, but not all, salaried employees. In any event, supervisors will be discussing with each salaried employee, hopefully within the next 3-4 weeks, his individual case and will be indicating whether or not salary action is contemplated during the remainder of this year."

QUESTION: My question is directed to the operation of the General Savings Fund option of the Carbide Savings Plan. The interest on the basic employees' contribution and on the deferred account has been and remains, according to the 1974 Prospectus, 2%. Considering that the basic interest paid by the commercial savings institutions is 6%, isn't it time Union Carbide reevaluated its 2%. To emphasize the point, consider just the current $20 million deferred account.

(Continued on page 8)

Richmond appointed new ORNL associate director

The appointment of Chester R. Richmond as Associate Director for Biomedical and Environmental Sciences has been announced by Oak Ridge National Laboratory Director, Herman Postma. The appointment is effective September 1.

Richmond has been associated with the Los Alamos Scientific Laboratory in New Mexico almost continuously since 1955. He has served in several positions of responsibility, and for the last 19 months as Alternate Health Division leader. From 1968 to 1971, Richmond was with the U. S. Atomic Energy Commission, Division of Biology and Medicine, in Washington, D.C.

Succeeds Totter

Richmond succeeds John R. Totter who is returning to research in the Biology Division, having completed a two-year appointment as chief administrator of ORNL's biomedical and environmental programs. Totter came to ORNL in October, 1972, after serving as Director of the U. S. Atomic Energy Commission's Division of Biomedical and Environmental Research.

In his new position, Richmond will be responsible for ORNL management overview of the Laboratory's extensive biological, medical and environmental research efforts.

During his 16 years at Los Alamos, Richmond had a major role in initiating projects which have a general impact on the radiation protection aspects of plutonium production and use in the nuclear energy program.

Received Lawrence Award

He was selected this year as one of five young U. S. scientists to receive the AEC's Ernest Orlando Lawrence Memorial Award for significant contributions to the development, use or control of atomic energy. He was specifically cited for "meritorious research on the radiation biology of internally deposited radionuclides, for outstanding contributions to the resolution of radiation protection problems, and for significant administrative contributions to the AEC's research program."

Chester R. Richmond

Richmond was born at South Amboy, N. J., in 1929. He received the B.A. in biology from New Jersey State College in 1952, the M.S. in biology from the University of New Mexico in 1954, and a Ph.D. in biology-physiology from the University of New Mexico in 1958.

The author of more than 60 scientific papers, Richmond has concentrated his work on the comparison of the metabolism of several radionuclides in different animal species, providing an important basis for the extrapolation of data from animal experiments to the human being. This work was of inestimable value in the development of radiation protection standards.

Major contributions

Richmond's major contributions have been to the knowledge of the behavior and effects of internal emitters in biological systems. Recent studies with plutonium have also contributed significantly to knowledge of the biological effects of plutonium particles deposited in the lung.

In this regard, Richmond has assisted the Space Nuclear Systems Division in quantifying the risk of plutonium-fueled nuclear power systems used in the Apollo lunar landing program. This information was vital to the decision to place five nuclear power stations on the moon.

Richmond has been involved in the Pioneer flights, the space nuclear systems-biomedical and environmental research interdivisional safety committee and other committees, such as the Plutonium Committee of the Nevada Applied Ecology Group and the Transuranium Technical Group.

NUCLEAR DIVISION SAFETY SCOREBOARD

Time worked without a lost-time accident through August 8:

Paducah	2 Days	15,000 Man-Hours
ORNL	53 Days	904,947 Man-Hours
ORGDP	155 Days	2,757,000 Man-Hours
Y-12	422 Days	13,275,000 Man-Hours

Land crab provides regeneration study

By Robert Wesley

Oak Ridge National Laboratory's Biology Division has long been noted for its colony of over 200,000 mice used in biology experiments, but less well known to local laymen is a facility for crustaceans, a class of primarily sea creatures. Although the word "crustacean" refers to a large class of hard-shelled arthropods which include lobsters, shrimp, water fleas and barnacles, among others, most of the experiments in the laboratory have been performed with the land crab, **Gecarcinus lateralis.** Approximately 400 to 500 crabs, obtained from Florida and Bermuda, are maintained in the facility at any given time.

The existence of this laboratory, under the direction of Dorothy Skinner, has made possible some important contributions to the study of DNA (deoxyribonucleic acid), the chemical of which genes are composed, as well as the addition of new information on crustacean physiology that might be applied to increased seafood production.

Easy to house, feed

In nature, crabs act as scavengers along beaches and underwater near the shoreline. They also play a major role in nature's ecological balance. "Crabs and other crustacea are important," Dr. Skinner explained, "because their larvae comprise about 40 percent of the plankton in the ocean - the main source of food for various ocean creatures. If something should happen to the crab, its loss would affect many other species, including those that humans depend on as a food source. There are very few crustacean laboratories in the United States, and even fewer involved in fundamental studies of DNA."

As laboratory animals, land crabs are relatively easy to house and to feed. They live in aquarium-type tanks on moistened sand for a floor. They consume such foods as soybeans, lettuce, carrots, chalk and the discarded limbs and shells of fellow crabs. They seem to be a social creature, preferring the company of other crabs to isolation, except at certain times in their life cycle. Deaths have been known to occur when a number of crabs are initially introduced to a tank, perhaps indicating fights for status and establishment of a "pecking order." Once this order of rank is established and acknowledged, the dormitory is usually peaceful.

Excellent study time

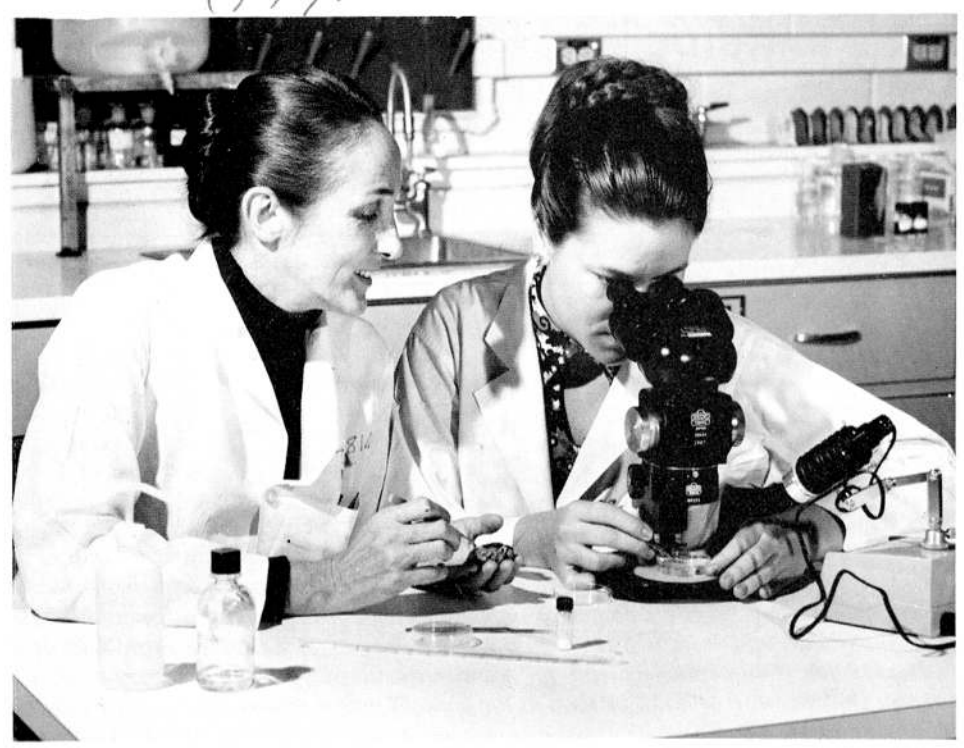
There are, however, certain times during the life cycle of a crab when it must have some privacy - during the last two weeks of its two-month molting period. During this period it sheds its outer protective layer, or exoskeleton, and thereby becomes extremely vulnerable to attack by predators, including fellow crabs. In nature, the molting crab hides in its burrow, several feet below the sand. In the laboratory the molting crab is removed from a tank and placed in private quarters and becomes a principal object of study.

The molt period provides excellent opportunities for the study of growth and development according to Dr. Skinner. "This phase permits us to study growing tissues versus nongrowing tissues. The creature cannot grow except at those times when it sheds the shell or exoskeleton and synthesizes a new one under the old. The new one is not hardened until after the shedding of the shell, a process known as ecdysis. The crab then emerges from its shell in a soft and pliable state. But some very complex mechanisms must operate before these events are accomplished. For instance, 75 percent of the old exoskeleton is degraded which weakens it sufficiently to permit the crab to break out. Much of the degraded material of the shell is conserved by the animal and utilized in the new shell after ecdysis. Certain portions of the shell are thinner than the others. These areas, called sutures, are the places where the exoskeleton breaks to allow the animal to emerge. At the same time, the crab's body is synthesizing the necessary proteins, and a polysaccharide called chitin, which will comprise the new exoskeleton. These dual processes of degradation and regeneration obviously require a series of interlocking biochemical events occurring within a few weeks' time. We would like to know more about them," she said.

Regenerates legs

Dr. Skinner and a former Ph.D. student, Dale E. Graham, have found that a crab can be induced to prepare for molting by a method that depends on one of the crab's own defense mechanisms called "autotomy." Like many other crustacea, if a crab is grasped firmly by one of its legs, the animal self-amputates that leg by contracting a special set of muscles at the base of the limb; this process has the advantage of not only facilitating escape but also preventing blood loss. The lost limb is regenerated during the next molting period. If the animal is induced to autotomize five or more of its ten legs, it will immediately begin a molt period in which it regenerates all the legs. The crab probably can accomplish this feat at least a dozen times during its lifetime, Dr. Skinner estimates.

One recent finding is that if one regenerative leg is removed from an animal before a certain critical time during the molting process, the rest of the regenerating limbs stop growing and wait for the recently lost limb to catch up. "This," she said, "requires the interaction of at least three control mechanisms, probably hormones, unless there is something different about the responsiveness of the regenerating tissue compared to the re-regenerating tissue."

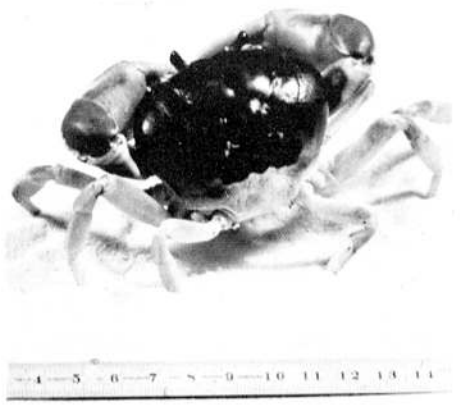


DNA STUDIES — DNA synthesis studies conducted with land crabs at Oak Ridge National Laboratory's Biology Division have confirmed that the crustacean's preparation for shedding its exoskeleton occurs as a result of a series of complex, interrelated parallel morphogenetic and biochemical events that suggest interlocking controls rather than a single trigger. Pictured are Dorothy Skinner, ORNL, left, and Christie Holland, a predoctoral student at The University of Tennessee - Oak Ridge Graduate School of Biomedical Studies.

EASY DOES IT — Wanda Beattie and Larry Yamoaka remove a land crab from its tank in the Biology Division's Crustacean Laboratory.

Let the crab live

She has passed along some of the findings to the crab canning industry to assist these industries in conserving the crab as a food source. Some time ago she suggested that canners of the popular Alaskan king crab not kill the crabs when they were removed from the ocean for canning. Since the canners were primarily interested in the legs of the crabs rather than their bodies, she suggested that canners remove by induced autotomy only five legs from the crabs and return them to the water. This would permit the animal to remain alive, to continue the reproduction of the species and to regenerate its legs for a possible future harvest or harvests. The idea has aroused some interest but "I don't believe it has taken hold yet. It makes sense not to kill these crabs merely to harvest their legs, especially since the harvest of this endangered species has fallen to less than one-third of what it was eight years ago," she said. "They live 10 to 20 years and could be harvested several times. We don't kill a sheep just to obtain its wool.



LAND CRAB — A number of DNA studies are conducted with crabs and other crustacea at ORNL's Biology Division. Crabs are particularly useful for the study of growing versus nongrowing tissue. The creature does not grow except at certain times during its life cycle when it sheds its old exoskeleton and synthesizes a new one under the old.

"Our laboratory was among the first to perform organ culture of crustacean tissues. By that, I mean that we have maintained epidermis (the tissue that

(Continued on page 8)

NUCLEAR DIVISION NEWS

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James A. Young, Editor, Y-12
Ext. 3-7100
Ruby Miller, Assoc. Editor, ORNL
Ext. 3-6421
Keith Bryant, Paducah
Bell 369
Doug Carter, ORGDP
Ext. 3-3434

—Member—
APPALACHIAN INDUSTRIAL
EDITORS' ASSOCIATION
INTERNATIONAL ASSOCIATION OF
BUSINESS COMMUNICATORS

Office
Post Office Box Y
Oak Ridge, Tenn. 37830

Roane State to offer approved engineering technology degree

The State Board of Regents and the Tennessee Higher Education Commission have approved a new degree program in engineering technology at Roane State Community College. Students will be able to begin study toward the associate of science degree in engineering technology when classes begin fall quarter.

This newest degree program was drawn up in response to the projected needs for technologists trained in the fundamentals of engineering.

The Engineering Technology program is set up so that a student will learn basic engineering skills and knowledge of technical material. At completion of the program, a student would have career preparation needed for entry into the engineering field on the technologist level. Or the student would be able to transfer to a four-year college where he would be able to complete the final two years toward a bachelor's degree in engineering.

Basically, the curriculum requires that the student complete a basic core of engineering courses. The student would then be able to select an emphasis in one or more engineering specialties such as civil, chemical, electrical or nuclear engineering technology.

Many of the courses in the curricula will be offered at the Y-12 Plant in the fall. Other courses will be offered in the Oak Ridge area. All of the courses will be offered at Roane State. Other courses to be offered at Roane State include introduction to engineering, engineering graphics, technical writing, management and supervision, and safety and first aid.

For further information, interested parties should contact Carroll Marsalis head of the Career Education Division at Roane State 354-3000, ext. 75 or the training office at Y-12, ext. 3-7856.

Roane State will hold its registration in Oak Ridge at Firestation number three, on Illinois Avenue, September 8, from 5 to 8 p.m.

Porter gets certified in industrial hygiene

Walter E. Porter, ORNL's Health Division, was recently certified in the comprehensive practice of industrial hygiene by the American Board of Industrial Hygiene.


Porter

Porter, a native of Smith County in Middle Tennessee, has a B.S. degree in premedical/natural sciences from The University of Tennessee, an M.S. degree in biology from the University of Mississippi; and a M.P.H. in environmental health/industrial hygiene from the University of Michigan.

Porter has worked in the Health Division since 1972. He previously worked in ORNL's Biology Division and in Radiation Safety at the Y-12 Plant.

Porter holds membership in the American Industrial Hygiene Association and the Tennessee Valley Section of AIHA. He was awarded membership in the American Academy of Industrial Hygiene when he became certified.

The American Board of Industrial Hygiene was organized to improve the practice and educational standards of the profession of industrial hygiene. In addition to achieving a satisfactory score on the certification examination, other qualifications are: high ethical and professional standing, a degree in an acceptable major subject, five years of full-time practice in industrial hygiene or full-time graduate study, and full-time practice of industrial hygiene at the time of applying for certification.

Porter and his wife, the former Kate Beasley, have three children: Carol, Walter Jr. and Mary Kate. They reside at 606 Woodland Drive, Clinton.

Division Deaths

Glynn W. Watson, 108 Oak Lane, Kingston, died August 4 in the Cherokee County Hospital, Centre, Ala. Mr. Watson, a native of Cherokee, was employed at the time of his death as a receiving and shipping clerk, Materials and Services Division at the Oak Ridge Y-12 Plant. He had previously worked at the Oak Ridge Gaseous Diffusion Plant.


Mr. Watson

He is survived by his wife, Ruby Lee Watson; two daughters, Mrs. Glenda Lee Weaver of Kingston and Mrs. Elizabeth Finch of Knoxville; a son, B. Joe Watson of Harriman; and a sister.

Funeral services were held in the chapel of Kyker Funeral Home, Kingston, with the Rev. George Atkinson officiating. Interment was in the Roane Memorial Gardens Mausoleum.

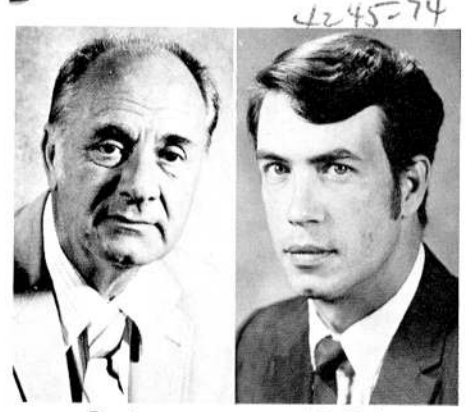
FORMER K-25ERS

Thomas Jeffers, who retired from ORGDP in 1960, died recently at his home on Route 5, Clinton. Mr. Jeffers is survived by a daughter, Mrs. Nancy Frazier, Jacksonville, Fla.; a son, Benny Joe Jeffers of Clinton; a brother; a sister and five grandchildren. Funeral services were held in the chapel of Martin Funeral Home, Clinton, with the Rev. Lee Kidwell officiating. Burial was in Pleasant View Cemetery.

William J. English, who worked at ORGDP from 1951 to 1958, died recently in the Oak Ridge Hospital. Mr. English is survived by his wife, Josephine D. English, 651 Pennsylvania Ave., Oak Ridge; two sons, Frank Kiernan and John Kiernan; a sister and six grandchildren. Funeral services were held in St. Mary's Catholic Church with the Rev. Robert Hofstetter officiating. Burial was in Anderson Memorial Gardens.

Organizational changes announced by H. Postma

Several organizational changes were announced recently by Herman Postma, Director of Oak Ridge National Laboratory. Alfred L. Boch was named director of Capital Projects for ORNL; William C. McClain succeeded Boch as program director of the Geologic Disposal Evaluation Program (formerly the Salt Mine Repository Project); and Thomas H. Row was appointed director of the Environmental Impact Reports Project, succeeding Edward G. Struxness who returned to full-time duties as assistant director of the Environmental Sciences Division.


Boch McClain

A native of Boston, Mass., Boch received a degree in electrical engineering from Northeastern University. He has done graduate study at The University of Tennessee.

Boch came to Oak Ridge in 1943 and worked in Y-12's electromagnetic separation plant. He has served in several administrative and technical positions at ORNL, including associate director of the Reactor Division and project director for both the High Flux Isotope Reactor and the Oak Ridge Electron Linear Accelerator.

As head of the new organization of Capital Projects, Boch is assigned to the Nuclear Division's Engineering staff. He has the overall responsibility for seeing that specification, cost estimates, schedules and quality assurance for these projects are prepared and followed.

William McClain is a member of the Chemical Technology Division. He received mining engineering degrees from the Colorado School of Mines and the University of Newcastle in Upon-Tyne, England. He joined the ORNL staff in 1963.

McClain was previously engaged in research and development activities in radioactive waste disposal and related geological investigations, including the Project Salt Vault experiment in Kansas. He has also done work in hydraulic fracturing of shales, seismology and rapid excavation.

As director of the Geologic Disposal Evaluation Program, he is now concerned with surveying all rock types and geologic formation in the United States and evaluating their suitability as possible repositories for all types of radioactive wastes.


Row

Thomas Row, a native of Virginia, received the B.S. degree in physics and the M.S. degree in nuclear engineering from Roanoke College and Virginia Polytechnic Institute and State University, respectively. He came to work in ORNL's Reactor Division in 1959.

As director of the Environmental Statements Project, Row is responsible for providing support to: the Directorate of Licensing for environmental analyses of nuclear power plant sites; the Directorate of Regulatory Standards for environmental analyses of the use of by-product materials in consumer products; the Nuclear Division for environmental analyses of Oak Ridge area operations as well as Paducah, Portsmouth, Fernald; and the HUD Program on Modular Utility System Impact Analysis.

ORNL's Becker will chair international conference

Klaus Becker, a research group leader in ORNL's Health Physics Division, is co-chairman of the Fourth International Conference on Luminescence Dosimetry to be held August 27-31 in Krakow, Poland. K. Shvartz, of Riga, USSR, also serves as co-chairman.


Becker

About 200 participants from 25 countries are expected to attend the conference. Seventy-five contributions will be presented dealing with the physical principles, new materials and techniques, practical applications of solid-state dosimeters based on thermoluminescence, radiophotoluminescence, exoelectron emission in personnel and environmental monitoring, medical physics, UV measurements and archaeometry.

Becker has served as co-organizer of three previous, highly successful topical conferences of this type: 1965 in Palo Alto, 1968 in Gatlinburg, and 1971 in Copenhagen, Denmark.

Becker has authored over 100 publications including several books on solid-state dosimetry and holds numerous patents. At the conference, Becker will present a paper that deals with thermoluminescence in ancient pottery. During his trip to Europe, he will also present invited talks at two other international conferences on environmental and neutron radiation protection, attend an IAEA Research Coordination Meeting and present several seminars in Germany, France and Italy.

Division has nine more CPS's; ORNL's featured

Editor's Note: We are very proud that nine more women in the Nuclear Division have earned their professional secretaries' certification. Due to limitation of space, the CPS's from ORNL will be featured in this issue of the **News**. *The other five, two from the Purchasing Division and three from ORGDP, will be featured in the next issue.*

Four ORNL women were recently certified as professional secretaries. They are: Anita S. Barker, Frances K. East, Janet C. Gentry and Brenda B. Moses.

Mrs. Barker is a native of Oak Ridge. She received the B.S. degree in office administration from The University of Tennessee, and came to work at ORNL in 1973.

She previously worked at ORNL as a summer student and did part-time clerical work while at UT. She currently works for Ed Gross in the Physics Division.

Mrs. Barker and her husband, James A. Jr., live at 1541J Coleman Road, Knoxville. Her father, William Schimmel, works in the Auditing Division at ORGDP.

Frances East is a native of West Point, Miss. She graduated from West Point High School and took special courses at Mississippi State College. She also took courses at The University of Tennessee.

Mrs. East worked for Don Mance, public accountant in Oak Ridge, prior to joining the ORNL staff in 1967. She is secretary to William O. Graves of the Finance and Materials Division.

Mrs. East has two sons and three daughters. She lives at 131 Tacoma Road, Oak Ridge.

Janet Gentry was born in Grayson County, Va., and lived in Bristol until about seven years ago. She graduated from Tennessee High School and Virginia Intermont College in Bristol. She worked at The University of Tennessee and Univac Sales Office in Knoxville prior to coming to ORNL in 1969.

Mrs. Gentry previously worked in the Solid State Division. She is currently secretary to Francis Perey of the Physics Division.

2258-74

FRANCES EAST — Mrs. East's past work experience includes five years with Standard Oil in Mississippi. Her hobbies include painting ceramics.

Mrs. Gentry lives on Martel Road in Lenoir City. She has two sons, Ronnie and Eddie.

Brenda Moses was born in Birmingham, Ala., but grew up in Oak Ridge. She is a graduate of Oak Ridge High School and has worked at ORNL for over eight years. She is a secretary in the Chemical Technology Division, and works at the TRU Facility for Lester J. King and Rex E. Leuze.

Mrs. Moses lives at 104 East Wadsworth Circle with her son, Dwayne, age eight, and daughter, Melissa, age three.

All four recipients of the professional secretary certification took preparatory courses sponsored by the National Secretaries Association in Oak Ridge.

BRENDA MOSES — Mrs. Moses has worked at ORNL for over eight years, and has always been assigned to the Chemical Technology Division.

ORNL

CAR POOL MEMBERS from Woodland area, Oak Ridge, to either portal, 8 a.m. shift. Norman Teasley, plant phone 3-6526, or home phone 483-9783.

JOIN CAR POOL from Tucker Road, Elm Grove area, Oak Ridge, to East Portal 8 a.m. shift. David Berry, plant phone 3-6465, home phone 483-8333.

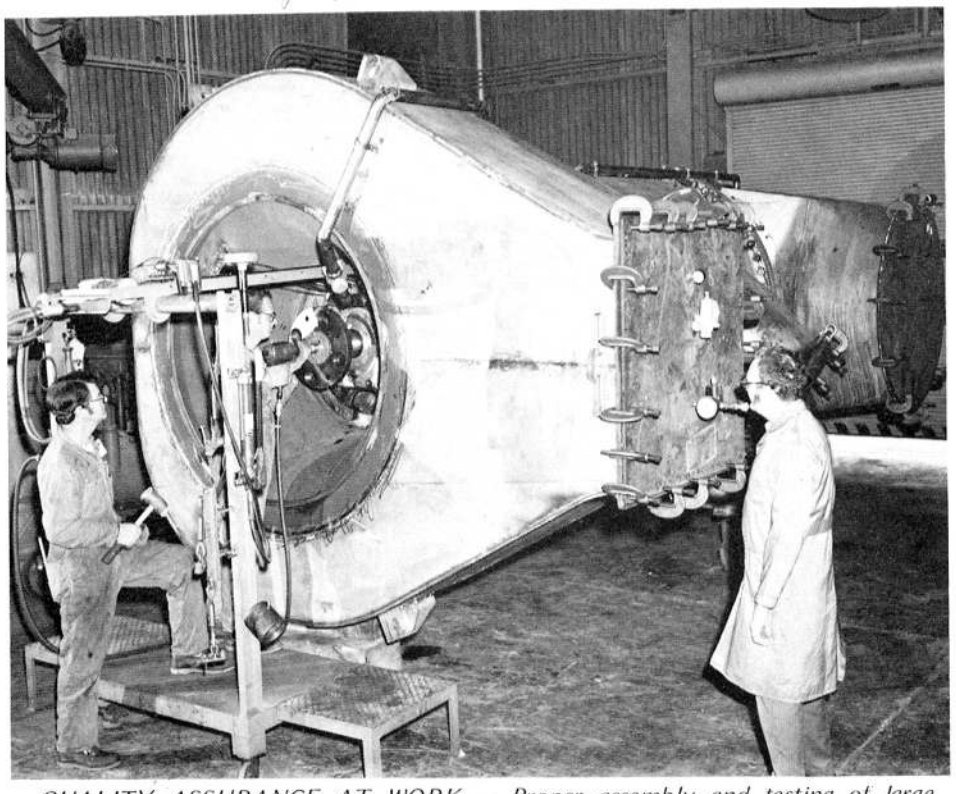
Y-12 PLANT

RIDE or JOIN CAR POOL from Amherst Lane, East Village vicinity, Oak Ridge to North Portal, 8 a.m. shift. Angie Puckett, home phone 483-7116 (after 5 p.m.).

ANITA BARKER — Mrs. Barker, a newly-wed, worked at ORNL as a summer student while attending The University of Tennessee.

JANET GENTRY — Mrs. Gentry has worked at ORNL for over five years. She enjoys oil painting and is organist at Martel Methodist Church in Lenoir City.

Paducah 4386-8



QUALITY ASSURANCE AT WORK — Proper assembly and testing of large compressors is very important to the improvement program at the Paducah Plant. Maintenance mechanics Hubert P. Jackson and William D. Brewer, and inspector Lamar Bryant recognize this in performing a leak test and installing a coupling flange on an axial flow compressor.

COMPANY Service 20 25 30

Y-12 PLANT

30 YEARS

Carl M. Jones, Beta 2 chemistry; Simon J. Myers Jr., general shops; Solomon T. Burress, buildings, grounds and maintenance shops; Theodore P. Sprague, Development Division; James R. Mangrum, casting department; Willie J. Wiggins, utilities administration; and Billy J. McNeely, ORNL chemical services.

25 YEARS

Raymond C. Whitehead.

20 YEARS

Donald W. Hackett, Harold L. Bell, Samuel E. McCoy, Edgar Cooper, Edmund D. Bores, Jasper B. Fincher Jr., Charles W. Catlett, Olin T. McDaniel, Charles H. Curtis, Carol L. Coley, Finley West and Ernest L. Reed.

Calendar of EVENTS

TECHNICAL

August 19-21

Chemical Technology Division Information Meeting: ORNL.

August 20

Solid State Division Seminar: "Interstitial Trapping and Detrapping in FCC Metals," Prof. H. Wollenberger, Institut fur Festkorperforschung der KFA, Julich, Germany. Building 3025 Conference Room, ORNL, 10 a.m.

August 22

Solar Energy Series: "Photosynthetic Conversion of Solar Energy to Hydrogen," Robert M. Pearlstein, Biology Division. Central Auditorium, Building 4500N, 11 a.m.

August 27

Solar Energy Series: "Technological and Economic Assessment of Solar Energy Electric Systems," Truman Anderson, Reactor Division. Central Auditorium, Building 4500N, 11 a.m.

September 4

Metals and Ceramics Division Seminar: "Corrosion, an Example of Materials and Energy Loss," Prof. Roger Staehle, Ohio State University. East Auditorium, Building 4500N, 2:45 p.m.

GENERAL STAFF

20 YEARS

Lloyd H. Kahler.

Clarence E. White, Imogene R. Parslay and Thomas A. Gardner Jr.

PADUCAH

30 YEARS

William A. Sullivan, welding pipe fabrication; and James F. Herpel, Power Utilities and Chemical Division.

ORGDP

30 YEARS

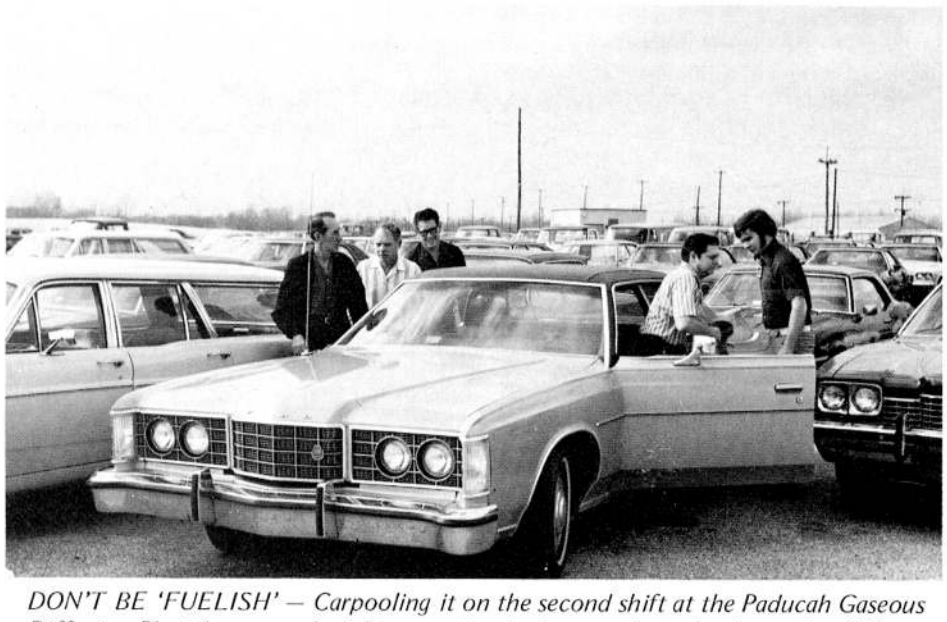
George F. Campbell Jr., instrument fabrication department; Carroll L. Lawson Sr., development maintenance; John H. Reed, guard department; James K. Roop, chemical operations administration; Robert L. Lively, shop services department; Roy R. Swatzell, U-235 separation department; Marvin N. Strickland Jr., power and utilities maintenance; Clyde D. Riggsbee, U-235 separation department; Carl T. Wilson, maintenance engineering department; Elisha Miller and Billy B. Ragan, U-235 separation department; Virginia T. Donahoe, Plant Superintendents Division; Robert E. Cassell, U-235 separation department; Ben W. Gaylor, chemical operations administration; Charles E. Whaley, utilities operations department; Woodrow Garrett, U-235 separation department; Elza N. Underwood, instrument fabrication department; Clyde A. Wilson, utilities operations department; James C. Pennycuff, janitors department; Bufurd A. Taylor, chemical operations administration; Constantine C. Hull, cascade maintenance department; Glenn C. Duncan, chemical operations administration; David B. Rains, shop services department; Edwin F. Babelay, support services department; Marvin P. Davis, chemical operations administration; James C. Shinpaugh, mechanical development department; John C. Milligan, utilities operations administration; and George V. McPeters, fire department.

25 YEARS

Jack C. Bailey.

20 YEARS

Henry H. Ridenour Jr., Fred W. Stout Jr., John W. Edwards, Robert F. Hyland and Tom L. Lowery.



DON'T BE 'FUELISH' — Carpooling it on the second shift at the Paducah Gaseous Diffusion Plant has proved mighty popular. An increase is noticed on other shifts as employees get together. Those wishing to carpool it, or get a ride to work, should get in touch with Keith Bryant, or call PAX 335.

ORGDP promotions name nine to new positions

74-2033

Harris

74-2034

Mrs. Jones

Carnes

Duncan

74-2032

Hudson

74-2036

Kent

74-1900

Mrs. Gibson

74-1833

Hope

Woods

Nine recent promotions have been announced at the Oak Ridge Gaseous Diffusion Plant.

Promoted to maintenance foremen in the Fabrication and Maintenance Division are Harry F. Harris, George H. Hudson and Ronald E. Kent; and Vickie J. Jones was named a laboratory aide in the Laboratory Division.

Ray Ellis Carnes has been made a pilot plant foreman in the Separations Systems Division. Samuel E. Duncan has been promoted to a planner and estimator in the Fabrication and Maintenance Division. In the Finance, Materials and Services Division, Annie G. Gibson has been promoted to a clerk. David M. Hope is a new fire and guard lieutenant in Security and Plant Protection; and Henry R. Woods is a new maintenance foreman in Fabrication and Maintenance.

Harris, a native of Broadford, Va., has been at ORGDP for more than 29 years. He previously worked at the National Gypsum Company in North Holston, Va.

Mrs. Harris is the former Mildred Porter and they live at Route 2, Philadelphia, Tenn. The couple has six grown children.

Hudson has also had more than 29 years' service at ORGDP. A native of Ovid, Mich., Hudson attended the Youngstown, Ohio, Institute of Technology and Wayne State University, Detroit. Prior to joining Union Carbide, he worked at the American Brass Company in Detroit.

Hudson, who is a Lt. Col. in the Civil Air Patrol, is married to the former Eva Borgers and they have two daughters. The family home is at Route 3, Oliver Springs.

Kent, who worked with Western Electric in Knoxville prior to joining Union Carbide in 1969, is a native of Oak Ridge. He is a graduate of Oak Ridge High and attended Florence State College, Alabama.

His wife is the former Brenda Abston and they have two children, Michael and Ronald. They live at 112 Malvern Road, Oak Ridge.

Mrs. Jones has been at ORGDP for less than a year. She had previously worked for the Burlington Hosiery Mills in Harriman.

Mrs. Jones, a native of Coalfield, is married to Ruben L. Jones Jr., and they live at Route 1, Oliver Springs. They have one son, Aaron Lee.

Carnes, a native of Bell County, Ky., attended Hinds Junior College in Raymond, Miss. A veteran of the U. S. Army, he has been at ORGDP for 21 years.

He and his wife, the former Mona Moneymaker live at Route 4, Clinton. They have three children, Karen, Amelia and Jane.

Duncan is a native of Oak Ridge. He has been at ORGDP for 10 years and worked with RCA Factory Service Company before joining Union Carbide. He is a graduate of Oak Ridge High School, the Tennessee Institute of Electronics and attended the U. S. Army Signal School.

Mrs. Duncan is the former Maxine Tays. They live at 102 Viola Road, Oak Ridge, with their children, Sammy and Kimberly.

Mrs. Gibson was born in Burnsville, Miss. She has been at ORGDP since 1973, but worked in Y-12, in the cafeteria and as a chemical operator before transferring to ORGDP.

She and her husband live at 131 West Vanderbilt Drive, Oak Ridge. She has a son, James W. Gordon II, and a step-son, Greg M. Gibson.

Hope, a native of Oak Ridge, worked with the Fire Department of the City of Oak Ridge before coming to ORGDP last year.

He and his wife, the former Teresa Ann Ray, live at 104 Vernon Road, Oak Ridge. They have a one-year old son, Michael.

Woods, a native of Newport, was a millwright at ORNL before transferring to ORGDP three years ago.

He lives at 2122 Seminole Avenue, Knoxville.

RECREATIONOTES

WINNING CATCH — Mike Estep, Y-12, is shown with a nine pound plus largemouth bass that took first place in that category in the plant's recent semi-annual fishing rodeo.

ORGDP GOLF TOURNAMENT

Cedar Hill laurels went to George Wylie, whose 70 card was low score for the July 27 meet. Willard Moore placed second with a 74.

Handicap lows went to J. F. Mooney, 74; and John Battle with a 79.

Charlie Phillips carded a total of 13 pars; Bob Napier 12.

In the second flight it was Bob Shilling with a 78; C. F. Hale with a total of 80.

Ron Hiltinen and D. L. Glovier pitted 79's and 80 cards in, to take handicap honors.

Jerry Love counted eight pars, W. G. Fort, seven.

Flight three went to Sam Turner and H. H. King, with 87 and 89. Handicap lows went to C. Lawson, 88; and Mike Friend, 89.

E. L. Blankenship turned in five pars; Alex Ooten, Ray Quarles and Randall Devault, four.

Y-12 GOLF TOURNAMENT

Benny Crass scored a 74 to take honors at Southwest Point last month, to beat other Y-12ers on the greens. Bill Hamill handed in a 77 score to place second.

In handicap scoring, it was Tom Smith with 79; Virgil Lovett with 82.

Rick Gallman, R. E. Plemons and Danny Rowan tied with 10 pars each.

Joe Sherrod and Charlie Neimeier scored 83 and 87 to take flight two. Russ Dagley and J. C. Nelson carded 87 and 89 scores for handicap lows in the second flight.

Bill Watkins counted seven pars, Avis Collins and Dan Morgan counted six.

Division three went to John Hamilton with a 92, closely followed by C. T. Haun, with 93.

Avery Kendig scored 95 and A. Nalepa 93 to score handicap lows.

C. V. Redding parred five holes; R. C. Rector and A. E. Burger four.

ORNL WOMEN'S BOWLING

The ORNL Women's Bowling League will meet Tuesday, August 20, at 5:15 p.m. at the Ark Bowling Lane. Anyone interested in bowling in the league is invited to come.

SOUTH HILLS H & J LEAGUE

Smith and Collins have won the second half of play in H & J Shift's League at South Hills. They face Sise and Hammond, who took the season's first half crown, to determine league champs.

CARBIDE MIXED BOWLING

The Oops team still counts itself ahead of the pack in the Carbide Mixed Family League, four ahead of the Strokers. Carl Butcher and Edith Duckworth again paced bowlers recently.

MELTON HILL GOLF LEAGUE

Mundt-Hummel still dominate the Melton Hill Golf League, only this time they are a mere two points ahead of the Alvey-Wright duo. Close behind them comes the Sherrod-Riggs two.

BEACH CLOSES LABOR DAY — The beach area of Clark Center Recreation Park will close down operations for the season at the end of Labor Day, Monday, September 2. You-all come back next year, hear?

SOFTBALL LEAGUES

With a tournament set this week, the Softball Leagues are all over but the weeping. The Snakes are assured top berth in the Atomic League, and the Rats have cinched the crown in the Nuclear League, as rains dampened the schedule last week.

League standings follow:

ATOMIC LEAGUE

Team	W	L
Snakes	18	1
Gashouse Gang	14	6
Ecology	12	7
Supersonics	12	9
Red Barons	10	9
Streakers	8	10
Y-12 Sox's No. 2	2	15

NUCLEAR LEAGUE

Rats	18	2
Raiders III	17	4
Computes	17	4
Over-The-Hill Gang	16	5
Al's Pals	9	8
Avengers	10	10
The Losers	7	9
Bombers	8	11
Bio-Rejects	8	13
Hornets	6	14
Artie's Army	4	16

SOUTHWEST POINT GOLF LEAGUE

The Crawford-Ooten team maintained a lead in the Southwest Point Golf League recently with a five-point win. In second place still is the Lay-Creswell duo.

SOUTH HILLS GOLF LEAGUE

Final standings in the South Hills Golf League give the Cozart-Graham team a clear-cut seven point claim to the crown, out in front of the Wright-Bryant team. Next in line came the Stafford-Madewell team, and the Burrus-McGinnis, Blankenship-Hitson teams.

Next Issue

The next issue will be dated September 5. The deadline is August 27.

Y-12 PLANT

CAR POOL members from Norwood, Cherokee Ridge area, Knoxville, to any portal, straight day. Eugene Keith, plant phone 3-7615, home Knoxville 947-8573.

ORNL GOLF TOURNAMENT

Joe Luckett and Bill Martin tied for the low man at Whittle Springs, as ORNLers took to the greens in their July tournament.

Walt Cox and N. O. Case placed high in handicap scoring with 74 and 77 each.

R. C. Bryant put down 13 pars; Don Dice and Frank Hammerling 12 each.

Ray Walker and Joe Bryson took flight two with 73 and 77 each.

J. A. Clinard and Jim Clem put handicap lows away with 73 and 83 respectively.

Fred Wetzel and C. R. Starlin parred 10 holes.

Flight three went to L. Williams and R. C. Owens with 82 and 84.

Handicap honors were gleaned by J. Anderson and Carl Ludemann with 84 and 90 apiece.

Olin Rogers counted nine pars; Frank O'Donnell, Ray Tucker and John Van Cleve turned in six.

FINAL GOLF TOURNAMENT

All Golf Tournaments for September 7 for Oak Ridge duffers have been cancelled due to the rescheduling of the UCLA-Tennessee football game. Oak Ridge Gaseous Diffusion golfers will compete in their final match August 24 at Southwest Point. An application for this tournament appears in this issue.

Oak Ridge National Laboratory golfers will compete at Wallace Hills, and Y-12ers at Whittles, on September 14. The application for both of these tournaments will appear in the next issue of the **Nuclear Division News**.

BOWLERS NEEDED

Bowlers are needed in all Carbide Leagues, rolling in the Oak Ridge area. New teams are needed in the ORGDP Men's Tuesday League, which rolls at 8:15 on Tuesday nights. Leagues will begin the first or second week of September.

Interested keglers should contact the Recreation Office, extension 3-5833.

SKEET TOURNAMENT

Last month's skeet winners saw George Kwicien, ORGDP, cap first place with a 49.461 score. Perry Bullard, Y-12, placed second with 49.156; and Y-12er Carl Brewster placed third with 49.149.

Tee-Off Time Application for Aug. 24

ORGDP — SOUTHWEST POINT

_____ LEADER __ _____ _____

_____ Phone Bldg.

_____

_____ _____
Time Preferred

COMPLETE AND RETURN TO YOUR RECREATION OFFICE

Entries must be received prior to drawing on August 21, 2 p.m.

ORGDP—Building K1001—C-Wing—MS 122

Tee-off times for all tournaments will be drawn on Wednesdays prior to each Saturday's tournament. Golfers are responsible for reserving their own carts by contacting the pro shop following drawing for tee-off times.

Who gets cancer of the prostate?

(Editor's Note: Dr. Lincoln alternates his regular column with "The Medicine Chest," where he answers questions from employees concerning their health in general. Questions are handled in strict confidence, as they are handled in our Question Box. Just address your question to "Medicine Chest," NUCLEAR DIVISION NEWS, Building 9704-2, Stop 20, or call the news editor in your plant, and give him your question on the telephone.)

By T. A. Lincoln, M.D.

Why do so many men develop cancer of the prostate when they pass 55 years of age? This cancer is the second most common cause of cancer death in men, taking its greatest toll after age 65. Although it can often be controlled for many years by surgery and hormone treatment and many cancer patients die of old age before their cancer destroys them, the cure rate is exceedingly low. For many years, epidemiologists have been trying to find clues to its causes by studying its natural history in large groups of men and looking for associations with other diseases, habits and environmental factors. Some fascinating observations have been made.

Probably the most interesting is the fact that latent or silent cancer of the prostate is extremely common. Several pathologists have performed meticulous searches of prostate glands removed from men at autopsy who had died for entirely unrelated conditions. One of the best studies was done over 20 years ago by several pathologists at the University of Manitoba in Winnipeg. They found cancer in 18.7 percent of the prostates they examined which came from men 50 or more years of age. The Manitoba group bent over backward to establish rigid criteria and had their positive diagnoses reviewed by the U. S. Armed Forces Institute of Pathology, the "Supreme Court" for pathologists whenever a dispute in a diagnosis occurs.

Disease is dormant

Since all these cases had had no clinical evidence of cancer at the time of death, it is obvious that in most men, this disease remains dormant for long periods of time. If the cancer is sometimes present as a tiny microscopic lesion at age 50, why does it occasionally break out and become dangerous five to thirty years later?

Prostate cancer does not seem to be related to the use of tobacco or alcohol, although patients with cirrhosis of the liver appear to have less. Since cirrhosis is often caused by excessive alcohol intake, one might wonder if alcohol had some protective effect on the prostate. The most logical explanation is the change in sex hormone level which often accompanies cirrhosis. The liver damage interferes with the metabolism of sex hormones and cirrhotic men often have elevated levels of estrogen, the female hormone. Estrogen is often used in the treatment of advanced cancer of the prostate and has a remarkable suppressive effect.

Japanese men living in Japan have always had a low rate of prostate cancer but those who emigrated to the United States many years ago, and now their sons also, have about the same rate as Americans. In this country, there is a considerably higher incidence among black men than white men but Jews generally have a low incidence both in this country and in Israel. It is much higher in Jews who came to Israel from Western Europe than from Eastern Europe. In other studies the presence or absence of circumcision was not a significant factor in gentiles so it is unlikely that ritual circumcision in Jews in the reason.

Published studies

Although reliable information on previous infections of the prostate is almost impossible to get, there doesn't appear to be any obvious association with prostatitis and later cancer. In a recently published study from Johns Hopkins University School of Hygiene and Public Health, the age adjusted death rate from prostate cancer was over 3.5 times higher in men who had benign prostatic hyperplasia, the enlarged prostates of old men. They followed for five to twenty years the outcome of almost 300 older men who had the diagnosis made but no surgery performed. They also followed a control population matched for age. Although 49 of the study group and 35 of the control group were still alive at the end of the study, they had no evidence of cancer. Thirty-five cases of prostate cancer occurred in the study group and only ten in the control group. A retrospective study of clinical records gave a slightly higher cancer rate.

The influence of diet and exposure to environmental pollution have been examined, at least superficially, and there are several interesting papers which suggest that excessive cadmium exposure is important. It has also been suggested that zinc in the diet may be important since zinc is a biological antagonist of cadmium. The zinc balance of the prostate is influenced by semen output since the average daily excretion of zinc in the semen is high. It has been speculated that men with increased sexual activity have a lower prostatic zinc content. However, there is no reliable epidemiological evidence that clinical cancer of the prostate has any relationship to past sexual activity. Cancer of the prostate is not significantly more common in married men than in single men.

The factors which predispose a man to future prostate cancer still largely remain unknown. There is a familial tendency so genetic factors are important. Individuals with enlarged prostates should be followed carefully to try to detect cancer early, if and when it should occur. The United States generally has a high prostate cancer incidence rate and it appears to be increasing. It is not just that men are living longer and therefore developing more cancer, although that obviously is important. Something we are eating, breathing or doing is making us more vulnerable. Someone needs to find out what it is.

Ferguson, Elkins, Tyrrell receive promotions at ORNL

1191-74

Three employees were promoted recently at the Oak Ridge National Laboratory. They are: N. Marion Ferguson, Analytical Chemistry Division; Chadwick B. Elkins, Plant and Equipment; and Patricia D. Tyrrell, Environmental Sciences Division.

N. Marion Ferguson has been promoted to supervisor of the Analytical Chemistry Division's facility in Building 2024 at Oak Ridge National Laboratory. The announcement was made recently by James C. White, Director of the Division.

Miss Ferguson, a native of Tazewell, Tenn., graduated from Claiborne County High School. She received the B.A. degree in chemistry from Lincoln Memorial University in Harrogate, Tenn.

Miss Ferguson joined the ORNL staff in 1954. She is a member of the American Chemical Society, and is past secretary-treasurer of the analytical group of the East Tennessee Section.

She resides at 226 North Purdue Avenue, Oak Ridge.

Elkins was born in the Heiskell Community in Knox County. He graduated from Halls High School and attended Wofford College in Spartanburg, S.C. He has worked at ORNL for over 11 years. His promotion is to maintenance foreman.

Elkins and his wife, the former Aline Hankins, live at Route 1, Heiskell. They have two sons and five daughters.

Mrs. Tyrrell is the former Patricia Donohoe of Chula Vista, Calif. She is a graduate of Southwestern Junior College and received the B.A. degree in zoology from the University of Southern Florida at Tampa. She is currently studying in the Ph.D. ecology program at The University of Tennessee.

Mrs. Tyrrell came to work in the ORNL Biology Division in 1970. She was a biological assistant prior to her recent promotion to research associate. Mrs. Tyrrell is a member of the Ecological Society of American and Tennessee Citizens for Wilderness Planning.

Miss Ferguson

Elkins

Mrs. Tyrrell

Her husband, Timothy, works in the Computer Sciences Division at ORNL. They reside on Gallaher Ferry Drive in Knox County.

'Our history'

The fifth BACKGROUNDER, prepared by Union Carbide as part of its Employee-Community Communications program, will be mailed to the homes of Nuclear Division employees on August 20.

The brochure entitled "Our History" starts with the early developments and events leading to the formation of the Corporation, discusses some of its significant achievements over the years, and describes its current worldwide, multinational activities. Carbide's contributions to the Manhattan Engineering District and the Atomic Energy Commission are also discussed.

15 6246

NEW ARMA OFFICERS — Jack D. Lindsey, left, and Wilburt D. Minter have been named officers in the East Tennessee Chapter of American Records Management Association. Lindsey will serve as vice president and Minter president of the professional organization aimed to promote professionalism in the field of records management. Both Lindsey and Minter are in the Y-12 Plant.

Land crab provides

(Continued from page 2)

synthesizes the exoskeleton) or regenerating limbs in a nutrient medium. We have compared the growth of the tissues in the living crab with the growth of the living tissues in the culture. Our finding has been that the tissues continue to grow and differentiate at about 40 percent of the rate observed in the crab. Using certain amino acids tagged with radioisotopes in the culture, we are able to follow the appearance of certain proteins during the growth process of both epidermis and muscle."

Several kinds of DNA

"Another line of experimentation," she pointed out, "is to find out something about the chemical structure and biological role of certain special DNAs, the genetic material that determines the characteristics and properties of an organism and its offspring. Each cell contains at least one copy of all the DNA. What one finds in many organisms, however, is that there is not just one kind of DNA, but several. There is usually a main component DNA. The others are referred to as 'satellite' DNAs and, although different from each other, are usually very simple in their structures, being comprised of millions of repeating short sequences of a few subunits. Since they can be isolated from the far more complex main component and since their structure is relatively simple, they are favorable molecules for study of the structure and metabolism of DNA.

"We have found that the presence of such satellites seems to be the rule rather than the exception in crustacea. For example, they comprise a large fraction of the DNA in both the American lobster and the edible blue crab. Our extensive studies on the physical properties of the blue crab satellite have given us some useful insights which can be applied to DNAs from many other organisms." In collaboration with Drs. James Dahlberg and Fred Blattner at Wisconsin, Dr. Skinner has recently determined the sequence of one of the more simple satellite DNAs. These results which are of interest in their own right also have implications for deciphering the structure of more complex mammalian DNAs.

Assistants named

Dr. Skinner, a Boston native (hence her appreciation of sea animals), holds a B.S. degree from Tufts and a Ph.D. degree from Harvard. She joined the ORNL Biology Division in 1966. Among her other scientific recognitions is election as Treasurer of the Society of General Physiologists and to the executive council of the American Society of Cell Biologists, and appointment to the Molecular Biology Study Section of the NIH.

Assisting Dr. Skinner in these experiments over a period of years has been Wanda Beattie, laboratory technician. Presently working in the laboratory are Christie Holland, a predoctoral student from Virginia, and Larry Yamaoka, a post-doctoral student from Hawaii, supported by funds from the Muscular Dystrophy Association.

Division Retirees

Bean Meadows

Two Nuclear Division employees retired effective August 1. Fred W. Bean, who was in the Operations Division at ORGDP, had been with Union Carbide since 1946. He retired to his 621 Banks Ave., Knoxville, home.

Halstead Meadows Sr., lives at 136 Maryville Circle, Oak Ridge. He joined Union Carbide in 1951, and was in A-wing shops at the Y-12 Plant at the time of his retirement.

LABOR DAY HOLIDAY

Monday, September 2, is an official holiday for Nuclear Division employees, as the nation celebrates its oldest national holiday.

No employee is required to be at work unless his presence is required by security or continuous operations.

NOTE OF INTEREST

Robert W. McClung, head of the Nondestructive Testing Laboratory at ORNL, will give the biennial Lester Honor Lecture at the 34th National Fall Conference of the American Society for Nondestructive Testing, October 21-24, in Detroit, Mich.

The lecture honors the memory of H. H. Lester, a nondestructive testing pioneer, who was senior physicist at the Watertown Arsenal in Massachusetts.

McClung was national president of the Society in 1969.

QUESTION BOX

(Continued from page 1)

Assuming that this money is invested for two years by the trustees at only 6%, and since the participants receive a meager 2%, then what is the disposition of over $1-1/2 million difference?

ANSWER: As you state, the Prospectus, which was distributed to employees, states that interest on deductions, Company contributions, and deferred account is guaranteed to pay 2% per year compounded annually. It also states that a proportionate share of any amount by which the earnings of the General Savings Fund exceeds this amount will be paid to the participants.

This means that each participant in the General Savings Fund receives a proportionate part of all earnings from the investments of the money in the General Savings Fund. In the Savings Plan payout July 1, 1973, approximately 6% interest was paid, 4% more than the 2% guaranteed.

QUESTION: When an employee dies, is the widow or widower paid the employee's termination pay? If not, why not? Isn't that part of his or her fringe benefit/salary package?

ANSWER: In the Nuclear Division, termination allowance is paid in connection with reduction in force or a medical termination. It also is paid, but in a reduced amount, on retirement to employees hired prior to specified dates in 1965 or 1966. In divisions of UCC other than the Nuclear Division, a termination allowance is paid only in connection with a reduction in force and is intended to provide an employee some income while he is seeking other employment.

A termination allowance is not paid when an employee dies. A widow or widower, however, is not left without benefits from the Company's programs. If the employee was in the Group Insurance Plan, an amount equal to approximately two times annual earnings is paid to the beneficiary. An amount equal to another year's annual earnings is also paid if the employee had supplemental insurance coverage. In addition, if the employee is at least 55 years of age with 10 or more years' service, the spouse will receive a Surviving Spouse Benefit from the Pension Plan equal to approximately 50% of the employee's Pension eligibility at the time of death.

QUESTION: In a recent Personal Investment Account statement in the News, it was stated that "the average cost was the cost of stock purchases during the month plus brokerage charges." Do we pay a brokerage fee when purchasing Company stock through the Savings Plan? And how much?

ANSWER: Throughout each month, instructions to buy and to sell UCC stock are handled in the Savings Plan Office. To the extent possible, orders to buy are matched against orders to sell and the transactions made without incurring any actual brokerage cost.

When buying orders exceed selling orders, it becomes necessary to purchase UCC stock on the N. Y. Stock Exchange and a brokerage cost is incurred.

Brokerage costs are allocated back to all regular buyers and sellers each month at the average cost per share for all shares purchased and matched. This means that the brokerage cost normally should be lower than the regular fee paid when purchasing stock on the Exchange. The average brokerage cost in June 1974 was 25 cents per share.

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